

REMARKS

Claims 13-31 were previously pending in the application. By the Amendment, Claims 13, 16, 19, 21, 22, 27-30, and 32 are currently amended, new Claims 33-38 have been added, and Claims 14, 15, 17, 20, and 23-25 remain unchanged.

Claims 13, 16, 19, 21, 22, 27-30, and 32 were rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Amendments have been made to the claims and as a result Applicant feels that the rejection should be withdrawn.

Claims 13-17, 23-25 and 28-30 were rejected under 35 USC §102(b) as being anticipated by Chay (US 3,888,790). Claims 13-15, 17, 20-25 and 32 were rejected under 35 USC §102(b) as being anticipated by Stiles (US 3,993,597). Claims 19 and 27 were rejected under 35 USC §102(b) as being anticipated by, or under 35 USC §103(a) as being obvious over Chay (US 3,888,790). Claims 16, 19 and 27-30 were rejected under 35 USC §102(b) as being anticipated by, or under 35 USC §103(a) as being obvious over Stiles (US 3,993,597).

The thermal decomposition and thereby the self-cleaning power of conventional coatings of parts on or in cooking, roasting, baking, and grilling devices is limited, because the remnants of foodstuffs in the solid phase do not come in contact with sufficient amounts of oxygen which is required for the decomposition of the soils. To solve this problem, Applicants have discovered that by providing layers with structures into which the soils can enter into and spread out and by providing means by which the soils can receive oxygen, the soils are able to decompose, resulting in a longer lasting coating.

Independent Claim 13 has been amended and now recites a cooking, roasting, baking or grilling device having a substrate with a self-cleaning coating thereon, said coating comprising a plurality of particles having first pores therein, wherein spaces between adjacent particles form *second pores* which *allow for solids and liquids to enter therein*, and a binder for binding said particles together at contact points, wherein said binder is a *colloidal solution* comprising one of an *inorganic polymer* and an *inorganic sol*, wherein said *colloidal solution* is formed with at least one of SiO₂, TiO₂, Al₂O₃, ZrO₂, SiC, Si₃N₄, and B₂O₃. 33. Dependant claim 33 recites a device according to claim 13, wherein said inorganic polymer is one of a *silicone resin* and a *polymeric phosphate*. Dependant claim 34 recites a device according to claim 13, wherein said pores within said particles are less than 1 μ m in diameter

in order to *prevent a solid or liquid* from entering therein. Dependant claim 35 recites a device according to claim 13, wherein said binder forms a *membrane surrounding* said particles, and said membrane includes *pores* which are *small enough to prevent a solid or liquid* from entering therein.

The prior art, particularly Chay and Stiles, does not disclose, among other things, a binder which is “a *colloidal solution* comprising one of an *inorganic polymer* and an *inorganic sol*, wherein said *colloidal solution* is formed with at least one of SiO₂, TiO₂, Al₂O₃, ZrO₂, SiC, Si₃N₄, and B₂O₃” as recited in Claim 13. Chay and Stiles instead have binders which are formed without the use of an *inorganic polymer* or an *inorganic sol*. Additionally, both Chay and Stiles are silent with respect to forming *second pores* which *allow for solids and liquids to enter therein*. Moreover, while Chay discusses forming ceramic catalysts having high porosity, Chay is silent with respect to the size of the porosity and specifically with whether said pores *prevent a solid or liquid from entering therein*. Moreover the combination of both having pores in particles which *prevent a solid or liquid from entering therein* and *pores* formed by spaces between adjacent particles *which allow for solids and liquids to enter therein* is not at all taught by any of the cited references.

For these and other reasons, Chay and Stiles, either alone or in combination, do not teach or suggest the subject matter defined by independent Claim 13. Therefore, Claim 13 is allowable. Claims 14-17, 19-25, 27-30, and 33-36 depend from Claim 13 and are allowable for the same reasons and also because they recite additional patentable subject matter.

New independent Claim 37 recites a substrate with a self-cleaning coating thereon, said coating comprising a plurality of particles having *first pores* therein, the particles comprising at least one of a metal oxide, a carbide, and a nitride, wherein spaces between adjacent particles form *second pores which are larger than the first pores such that the first pores prevent a solid or liquid from entering therein and the second pores allow for solids and liquids to enter therein*, and a binder for binding said particles together at contacts points, wherein said binder is formed with at least one of a metal oxide, a carbide, and a nitride.

The prior art, particularly Chay and Stiles, does not disclose a substrate with a self-cleaning coating thereon as recited in Claim 37. More specifically, the prior art does not disclose, among other things, the coating having particles having *first pores* therein, wherein spaces between adjacent particles form *second pores which are larger than the first pores such that the first pores prevent a solid or liquid from entering therein and the second pores*

allow for solids and liquids to enter therein. Therefore, Applicants respectfully request allowance of independent Claim 37.

New independent Claim 38 recites a substrate with a self-cleaning coating thereon, said coating comprising a plurality of particles having first pores therein, the particles comprising at least one of a metal oxide, a carbide, and a nitride, wherein spaces between adjacent particles form second pores, and a binder for binding said particles together at contacts points, wherein said binder forms a *membrane* surrounding said particles, wherein said binder is formed with at least one of a metal oxide, a carbide, and a nitride, and wherein said binder forms *third pores which are smaller than the second pores such that the third pores prevent a solid or liquid from entering therein and the second pores allow for solids and liquids to enter therein.*

The prior art, particularly Chay and Stiles, does not disclose a substrate with a self-cleaning coating thereon as recited in Claim 38. More specifically, the prior art does not disclose, among other things, the coating having a binder which forms *third pores which are smaller than second pores such that the third pores prevent a solid or liquid from entering therein and the second pores allow for solids and liquids to enter therein.* Therefore, Applicants respectfully request allowance of independent Claim 38.

CONCLUSION

In view of the above, entry of the present Amendment and allowance of Claims 13-17, 19-25, 27-30 and 32-38 are respectfully requested. If the Examiner has any questions regarding this amendment, the Examiner is requested to contact the undersigned. If an extension of time for this paper is required, petition for extension is herewith made.

Respectfully submitted,



Craig J. Loest
Registration No. 48,557
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BSH Home Appliances Corp.
100 Bosch Blvd
New Bern, NC 28562
Phone: 252-672-7930
craig.loest@bshg.com